

AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) An apparatus comprising:

a first processing circuit configured to generate a plurality of reconstructed samples in response to ~~one or more a~~ plurality of macroblocks of an input signal; and

5 a second processing circuit configured to (A) generate a plurality of sum values based on said reconstructed samples, said sum values defining a plurality of prediction types based on a number of said sum values that are available and (B) individually determine a plurality of intra prediction DC predictors predictor
10 for each of a plurality of chroma sub-blocks respectively sub-block of a current macroblock, wherein ~~(A) each~~ (i) all of said intra prediction DC predictors are (i) generated using a first of said prediction types when all of said sum values in response to one or
15 two of four adjacent reconstructed samples when four adjacent ~~reconstructed samples~~ are available, and (ii) both (a) a first subset of said intra prediction DC predictors are generated using said first prediction type and (b) a second subset of said intra prediction DC predictors are generated using a second of said prediction types when a single one of said sum values is
20 unavailable in response to one or two samples when two adjacent reconstructed samples on the same edge are available and otherwise ~~(iii) individually generated in response to one or two available~~

~~reconstructed samples adjacent to said current macroblock, said one or two available reconstructed samples are vertically aligned with or horizontally aligned with each chroma sub-block and (B) each of said adjacent reconstructed samples are reconstructed from pixel samples.~~

2. (ORIGINAL) The apparatus according to claim 1, wherein said second processing circuit is implemented in a decoding loop of an encoder.

3. (ORIGINAL) The apparatus according to claim 1, wherein said first and said second processing circuits comprise a decoder.

4. (ORIGINAL) The apparatus according to claim 1, wherein said apparatus comprises an H.264 compliant decoder.

5. (CURRENTLY AMENDED) The apparatus according to claim 1, wherein said second processing circuit comprises:

~~an intra prediction~~ a third processing circuit configured to generate an intra predicted chroma sub-block in response to one of said intra prediction DC predictors.

6. (ORIGINAL) The apparatus according to claim 5, wherein said second processing circuit further comprises:

5 a control circuit configured to generate said intra prediction DC predictor for each of said chroma sub-blocks in response to said reconstructed samples.

7. (ORIGINAL) The apparatus according to claim 6, wherein said control circuit is further configured to determine a position of a top edge and a left edge of a chroma block of said current macroblock.

8. (PREVIOUSLY PRESENTED) The apparatus according to claim 7, wherein said reconstructed samples comprise a plurality of reconstructed samples in a row adjacent to said top edge of said chroma block.

9. (PREVIOUSLY PRESENTED) The apparatus according to claim 7, wherein said reconstructed samples further comprise a plurality of reconstructed samples in a column adjacent to said left edge of said chroma block.

10. (CANCELED).

11. (CANCELED).

12. (CURRENTLY AMENDED) An apparatus comprising:

means for generating a plurality of reconstructed samples in response to ~~one or more~~ a plurality of macroblocks of an input signal; and

5 means for (A) generate a plurality of sum values based on said reconstructed samples, said sum values defining a plurality of prediction types based on a number of said sum values that are available and (B) individually determining a plurality of intra
prediction chroma mode 0 predictors predictor for each of a
10 plurality of chroma sub-blocks respectively sub-block of a current macroblock, wherein ~~(A) each~~ (i) all of said intra prediction
chroma mode 0 predictors are ~~(i) generated~~ using a first of said
prediction types when all of said sum values in response to one or
two of four adjacent reconstructed samples when four adjacent
15 reconstructed samples are available, and (ii) both (a) a first
subset of said intra prediction chroma mode 0 predictors are
generated using said first prediction type and (b) a second subset
of said intra prediction chroma mode 0 predictors are generated
using a second of said prediction types when a single one of said
20 sum values in unavailable in response to one or two samples when
two adjacent reconstructed samples on the same edge are available
and otherwise (iii) individually generated in response to one or
two available reconstructed samples adjacent to said current
macroblock, said one or two available reconstructed samples are

25 ~~vertically aligned with or horizontally aligned with each chroma~~
~~sub-block and (B) each of said adjacent reconstructed samples are~~
~~reconstructed from pixel samples.~~

13. (CURRENTLY AMENDED) A method for intra prediction of
a chroma block ~~sub-block~~ comprising the steps of:

(A) generating a plurality of reconstructed samples in
response to ~~one or more~~ a plurality of macroblocks of an input
5 signal; and

(B) generating a plurality of sum values based on said
reconstructed samples, said sum values defining a plurality of
prediction types based on a number of said sum values that are
available;

10 (C) determining a plurality of intra prediction chroma
mode 0 ~~predictors~~ predictor for each of a plurality of chroma ~~sub-~~
~~blocks respectively~~ ~~sub-block~~ of a current macroblock individually,
wherein (A) ~~each~~ (i) all of said chroma mode 0 predictors are ~~(i)~~
generated using a first of said prediction types when all of said
15 sum values in response to one or two of four adjacent reconstructed
~~samples when four adjacent reconstructed samples are available, and~~
(ii) both (a) a first subset of said intra prediction chroma mode
0 predictors are generated using said first prediction type and (b)
a second subset of said intra prediction chroma mode 0 predictors
20 are generated using a second of said prediction types when a single

~~one of said sum values in unavailable in response to one or two samples when two adjacent reconstructed samples on the same edge are available and otherwise (iii) individually generated in response to one or two available reconstructed samples adjacent to said current macroblock, said one or two available reconstructed samples are vertically aligned with or horizontally aligned with each chroma sub-block and (B) each of said adjacent reconstructed samples are reconstructed from pixel samples,; and~~

~~(D) generating a compressed and encoded video bit stream using the determined predictor said intra prediction chroma mode 0 predictors to reduce spatial redundancy.~~

14. (CANCELED) .

15. (CURRENTLY AMENDED) The method according to claim 13, wherein: ~~each of said prediction types used to generate each of said intra prediction chroma mode 0 predictors predictor for each chroma sub-block of a current macroblock is selected independently in response to availability of said ~~available~~ reconstructed samples adjacent to said chroma block ~~current macroblock~~.~~

16. (ORIGINAL) The method according to claim 13, further comprising:

generating said reconstructed samples by inverse quantizing and inverse transforming a compressed bitstream.

17. (CURRENTLY AMENDED) The method according to claim 23
~~13~~, further comprising:

generating all of said intra prediction chroma mode 0
predictors using a fourth of said prediction types predetermined
5 value for said predictor when no sums when none of said sum values
are available, wherein said prediction types comprise at most four
of said prediction types.

18. (CURRENTLY AMENDED) The method according to claim
17, wherein said third prediction type predetermined value
comprises a median chroma value.

19. (CANCELED).

20. (CURRENTLY AMENDED) The method according to claim 13
~~14~~, wherein each of said intra prediction chroma mode 0 predictors
predictor for each chroma sub-block of a current macroblock
comprises a weighted average of one or more of said sum values
5 corresponding sums.

21. (NEW) The apparatus according to claim 1, wherein said second processing circuit is further configured to generate all of (i) a third subset of said intra prediction DC predictors using said first prediction type, (ii) a fourth subset of said
5 intra prediction DC predictors using said second prediction type and (iii) a fifth subset of said intra prediction DC predictors using a third of said prediction types when two of said sum values are unavailable.

22. (NEW) The apparatus according to claim 1, wherein said second processing circuit is further configured to generate a signal carrying mode information that identifies said prediction
5 types used to generate said intra prediction DC predictors, said apparatus further comprising an encoder configured to generate a compressed and encoded video bit stream incorporating said mode information.

23. (NEW) The method according to claim 13, further comprising:

generating all of (i) a third subset of said intra prediction chroma mode 0 predictors using said first prediction
5 type, (ii) a fourth subset of said intra prediction chroma mode 0 predictors using said second prediction type and (iii) a fifth subset of said intra prediction chroma mode 0 predictors using a

third of said prediction types when two of said sum values are unavailable.

24. (NEW) The method according to claim 13, further comprising the step of:

generating a signal carrying mode information that identifies said prediction types used to generate said intra
5 prediction chroma mode 0 predictors, wherein said compressed and encoded bit stream incorporates said mode information.